

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242674

Luminaire Tested: S124DRP-S575D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242674
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S575D835-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

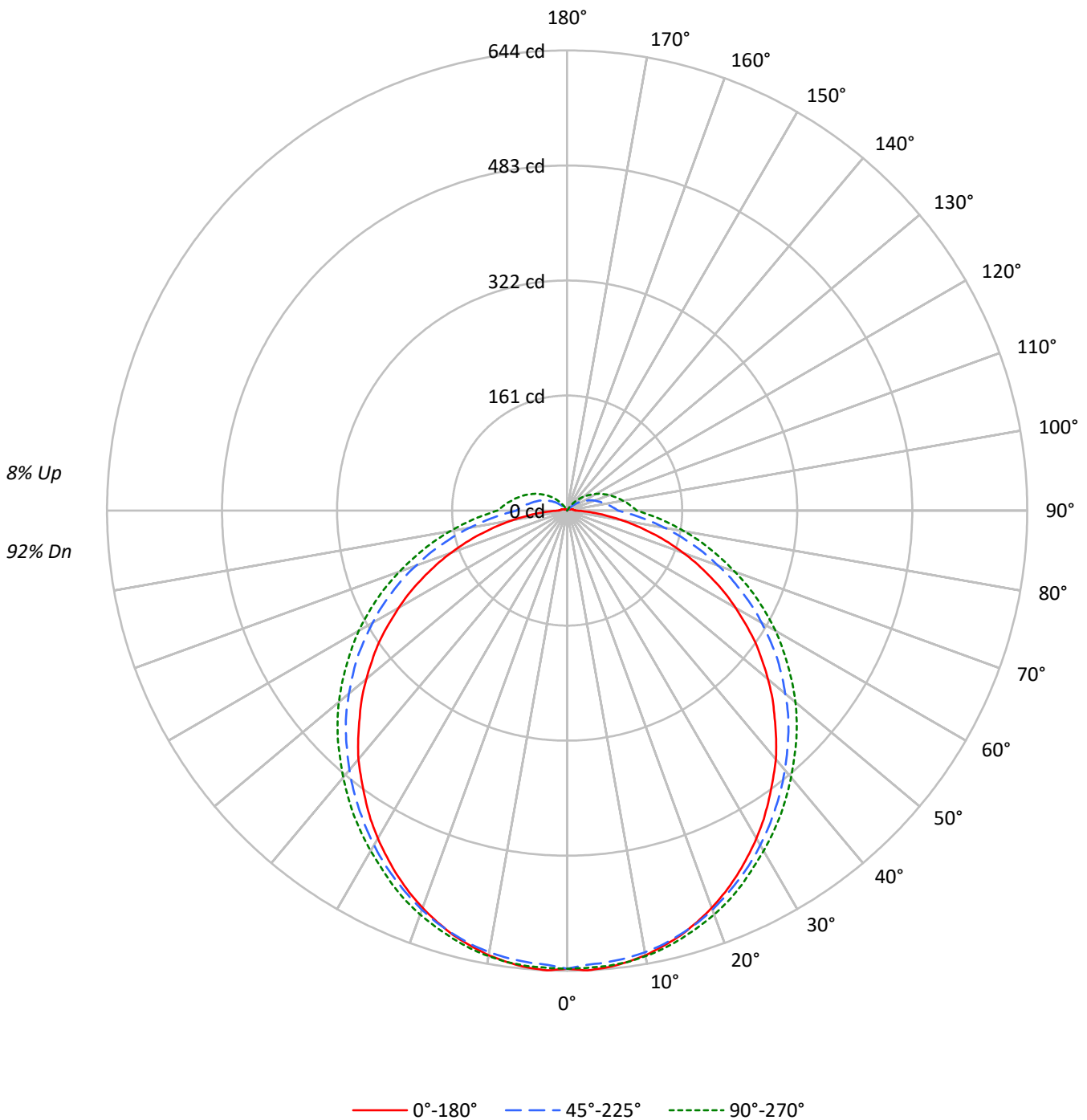
Lumens per Lamp: N/A
Luminaire Lumens: 2186.1 lumens
Efficiency: N/A
Efficacy: 116.3 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 117 | 117 | 117 | 117 | 114 | 114 | 114 | 114 | 107 | 107 | 107 | 101 | 101 | 101 | 95 | 95 | 95 | 92 |
| 1 | 105 | 100 | 95 | 91 | 102 | 97 | 93 | 89 | 91 | 88 | 84 | 86 | 83 | 80 | 81 | 79 | 77 | 74 |
| 2 | 95 | 86 | 79 | 73 | 92 | 84 | 77 | 71 | 79 | 73 | 68 | 74 | 70 | 66 | 70 | 67 | 63 | 60 |
| 3 | 87 | 75 | 67 | 60 | 83 | 73 | 65 | 59 | 69 | 62 | 57 | 65 | 60 | 55 | 62 | 57 | 53 | 50 |
| 4 | 79 | 66 | 57 | 50 | 76 | 65 | 56 | 49 | 61 | 54 | 48 | 58 | 52 | 47 | 55 | 49 | 45 | 43 |
| 5 | 73 | 59 | 50 | 43 | 70 | 58 | 49 | 42 | 55 | 47 | 41 | 52 | 45 | 40 | 49 | 44 | 39 | 37 |
| 6 | 67 | 53 | 44 | 37 | 64 | 52 | 43 | 37 | 49 | 42 | 36 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 7 | 62 | 48 | 39 | 33 | 60 | 47 | 38 | 32 | 45 | 37 | 32 | 43 | 36 | 31 | 41 | 35 | 30 | 28 |
| 8 | 58 | 44 | 35 | 29 | 56 | 43 | 35 | 29 | 41 | 33 | 28 | 39 | 32 | 28 | 37 | 31 | 27 | 25 |
| 9 | 54 | 40 | 32 | 26 | 52 | 39 | 31 | 26 | 38 | 30 | 25 | 36 | 29 | 25 | 34 | 29 | 24 | 22 |
| 10 | 50 | 37 | 29 | 24 | 49 | 36 | 29 | 23 | 35 | 28 | 23 | 33 | 27 | 23 | 32 | 26 | 22 | 20 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5700 | 5700 | 5700 |
| 5° | 5717 | 5564 | 5579 |
| 10° | 5682 | 5468 | 5459 |
| 15° | 5630 | 5357 | 5322 |
| 20° | 5554 | 5235 | 5188 |
| 25° | 5466 | 5100 | 5042 |
| 30° | 5372 | 4966 | 4892 |
| 35° | 5266 | 4828 | 4760 |
| 40° | 5180 | 4696 | 4622 |
| 45° | 5054 | 4574 | 4504 |
| 50° | 4947 | 4434 | 4378 |
| 55° | 4837 | 4301 | 4231 |
| 60° | 4664 | 4133 | 4096 |
| 65° | 4476 | 3952 | 3930 |
| 70° | 4245 | 3744 | 3738 |
| 75° | 3926 | 3515 | 3560 |
| 80° | 3572 | 3291 | 3380 |
| 85° | 3119 | 3079 | 3255 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5054 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 60.8 | 2.8 |
| 10°-20° | 174.1 | 8.0 |
| 20°-30° | 263.2 | 12.0 |
| 30°-40° | 318.4 | 14.6 |
| 40°-50° | 336.6 | 15.4 |
| 50°-60° | 316.8 | 14.5 |
| 60°-70° | 262.9 | 12.0 |
| 70°-80° | 184.5 | 8.4 |
| 80°-90° | 104.0 | 4.8 |
| 90°-100° | 61.9 | 2.8 |
| 100°-110° | 45.9 | 2.1 |
| 110°-120° | 30.8 | 1.4 |
| 120°-130° | 17.3 | 0.8 |
| 130°-140° | 7.5 | 0.3 |
| 140°-150° | 1.5 | 0.1 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 498.0 | 22.8 |
| 0°-40° | 816.4 | 37.3 |
| 0°-60° | 1469.9 | 67.2 |
| 0°-90° | 2021.3 | 92.5 |
| 90°-120° | 138.5 | 6.3 |
| 90°-150° | 164.8 | 7.5 |
| 90°-180° | 165.0 | 7.5 |
| 0°-180° | 2186.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0° | 641 | 641 | 641 | 641 | 641 | |
| 5° | 642 | 640 | 635 | 640 | 640 | 61 |
| 15° | 615 | 616 | 614 | 620 | 620 | 173 |
| 25° | 563 | 567 | 569 | 577 | 578 | 259 |
| 35° | 493 | 501 | 508 | 518 | 521 | 308 |
| 45° | 411 | 424 | 438 | 450 | 454 | 317 |
| 55° | 322 | 337 | 358 | 373 | 377 | 287 |
| 65° | 223 | 246 | 270 | 288 | 294 | 221 |
| 75° | 124 | 150 | 180 | 200 | 207 | 131 |
| 85° | 38 | 68 | 100 | 122 | 129 | 40 |
| 90° | 12 | 40 | 71 | 92 | 98 | 8 |
| 95° | 9 | 33 | 62 | 82 | 88 | 7 |
| 105° | 6 | 21 | 47 | 65 | 71 | 7 |
| 115° | 4 | 11 | 34 | 50 | 55 | 5 |
| 125° | 3 | 2 | 20 | 34 | 38 | 3 |
| 135° | 1 | 1 | 6 | 18 | 22 | 1 |
| 145° | 1 | 0 | 0 | 4 | 7 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 | 0 |

TEST NUMBER: P242674

CATALOG NUMBER: S124DRP-S575D835-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 0° | 641.2 | 641.2 | 641.2 | 641.2 | 641.2 |
| 2.5° | 644.1 | 641.9 | 636.2 | 641.2 | 640.5 |
| 5° | 641.9 | 639.8 | 634.7 | 640.5 | 639.8 |
| 7.5° | 637.6 | 636.2 | 631.9 | 638.3 | 637.6 |
| 10° | 631.9 | 631.1 | 627.6 | 634.0 | 633.3 |
| 12.5° | 624.0 | 624.0 | 621.8 | 627.6 | 627.6 |
| 15° | 615.3 | 616.1 | 613.9 | 620.4 | 619.7 |
| 17.5° | 603.9 | 606.0 | 605.3 | 611.8 | 611.0 |
| 20° | 591.7 | 593.8 | 594.5 | 601.7 | 601.7 |
| 22.5° | 578.0 | 580.9 | 582.3 | 589.5 | 590.9 |
| 25° | 562.9 | 567.2 | 569.4 | 577.3 | 578.0 |
| 27.5° | 546.4 | 552.9 | 555.8 | 562.9 | 563.6 |
| 30° | 529.9 | 535.6 | 540.7 | 548.6 | 550.0 |
| 32.5° | 512.0 | 519.1 | 524.9 | 534.2 | 535.6 |
| 35° | 492.6 | 501.2 | 508.4 | 518.4 | 520.6 |
| 37.5° | 473.2 | 483.2 | 491.8 | 501.9 | 504.1 |
| 40° | 454.5 | 463.8 | 473.9 | 484.7 | 487.5 |
| 42.5° | 433.0 | 443.7 | 455.9 | 468.2 | 470.3 |
| 45° | 410.7 | 424.4 | 438.0 | 450.2 | 453.8 |
| 47.5° | 389.9 | 403.5 | 419.3 | 431.5 | 435.8 |
| 50° | 366.9 | 382.7 | 398.5 | 412.9 | 417.2 |
| 52.5° | 343.9 | 359.7 | 378.4 | 392.8 | 397.1 |
| 55° | 321.7 | 336.8 | 358.3 | 372.7 | 377.0 |
| 57.5° | 296.5 | 315.2 | 336.0 | 353.3 | 356.9 |
| 60° | 272.1 | 290.8 | 314.5 | 331.0 | 336.8 |
| 62.5° | 248.4 | 269.3 | 293.0 | 309.5 | 315.2 |
| 65° | 222.6 | 245.6 | 270.0 | 287.9 | 293.7 |
| 67.5° | 198.2 | 222.6 | 248.4 | 266.4 | 272.1 |
| 70° | 173.0 | 197.5 | 224.7 | 244.1 | 249.2 |
| 72.5° | 148.6 | 173.8 | 203.2 | 221.9 | 227.6 |
| 75° | 123.5 | 150.1 | 180.2 | 200.3 | 206.8 |
| 77.5° | 99.8 | 127.8 | 159.4 | 179.5 | 186.7 |
| 80° | 78.3 | 107.0 | 138.6 | 160.1 | 165.9 |
| 82.5° | 56.7 | 86.9 | 118.5 | 140.7 | 147.2 |
| 85° | 38.1 | 68.2 | 100.5 | 122.1 | 129.2 |
| 87.5° | 23.7 | 53.1 | 84.7 | 105.5 | 112.0 |
| 90° | 11.5 | 40.2 | 71.1 | 91.9 | 97.7 |
| 92.5° | 10.8 | 35.9 | 66.8 | 86.9 | 92.6 |
| 95° | 9.3 | 33.0 | 62.5 | 81.9 | 88.3 |
| 97.5° | 8.6 | 29.4 | 58.9 | 77.5 | 84.0 |
| 100° | 7.9 | 26.6 | 54.6 | 74.0 | 79.0 |
| 102.5° | 7.9 | 23.7 | 51.0 | 69.6 | 75.4 |
| 105° | 6.5 | 20.8 | 47.4 | 65.3 | 71.1 |
| 107.5° | 6.5 | 18.7 | 43.8 | 61.8 | 66.8 |
| 110° | 5.7 | 15.8 | 40.9 | 57.4 | 63.2 |

TEST NUMBER: P242674

CATALOG NUMBER: S124DRP-S575D835-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|------|-------|------|
| 112.5° | 5.0 | 13.6 | 37.3 | 53.1 | 58.9 |
| 115° | 4.3 | 10.8 | 33.7 | 49.5 | 54.6 |
| 117.5° | 4.3 | 8.6 | 30.2 | 45.2 | 51.0 |
| 120° | 3.6 | 5.7 | 26.6 | 40.9 | 46.7 |
| 122.5° | 3.6 | 3.6 | 23.0 | 37.3 | 42.4 |
| 125° | 2.9 | 2.2 | 20.1 | 33.7 | 38.1 |
| 127.5° | 2.9 | 2.2 | 16.5 | 29.4 | 34.5 |
| 130° | 2.2 | 1.4 | 12.9 | 25.8 | 30.2 |
| 132.5° | 2.2 | 1.4 | 10.1 | 22.3 | 26.6 |
| 135° | 1.4 | 1.4 | 6.5 | 18.0 | 22.3 |
| 137.5° | 1.4 | 0.7 | 3.6 | 14.4 | 18.0 |
| 140° | 1.4 | 0.7 | 1.4 | 10.8 | 14.4 |
| 142.5° | 0.7 | 0.7 | 0.0 | 7.9 | 10.8 |
| 145° | 0.7 | 0.0 | 0.0 | 4.3 | 7.2 |
| 147.5° | 0.7 | 0.0 | 0.0 | 0.7 | 3.6 |
| 150° | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CIE UGR TABLE:

| Reflectances: | | | | | | | | | | | |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Reference plane | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 15.84 | 17.36 | 16.32 | 17.83 | 18.33 | 17.39 | 18.92 | 17.87 | 19.38 | 19.88 |
| | 3H | 17.48 | 18.87 | 17.97 | 19.34 | 19.88 | 19.70 | 21.09 | 20.19 | 21.56 | 22.10 |
| | 4H | 18.04 | 19.36 | 18.55 | 19.85 | 20.40 | 20.76 | 22.07 | 21.27 | 22.57 | 23.12 |
| | 6H | 18.43 | 19.65 | 18.95 | 20.16 | 20.73 | 21.81 | 23.04 | 22.33 | 23.54 | 24.11 |
| | 8H | 18.53 | 19.71 | 19.07 | 20.24 | 20.81 | 22.33 | 23.50 | 22.87 | 24.03 | 24.61 |
| | 12H | 18.59 | 19.72 | 19.14 | 20.24 | 20.85 | 22.88 | 24.01 | 23.42 | 24.53 | 25.13 |
| 4H | 2H | 16.68 | 18.00 | 17.20 | 18.49 | 19.05 | 17.89 | 19.21 | 18.40 | 19.70 | 20.25 |
| | 3H | 18.57 | 19.69 | 19.09 | 20.22 | 20.80 | 20.42 | 21.54 | 20.94 | 22.07 | 22.65 |
| | 4H | 19.27 | 20.30 | 19.81 | 20.84 | 21.45 | 21.64 | 22.66 | 22.18 | 23.21 | 23.81 |
| | 6H | 19.79 | 20.69 | 20.35 | 21.26 | 21.88 | 22.87 | 23.77 | 23.43 | 24.34 | 24.96 |
| | 8H | 19.94 | 20.79 | 20.51 | 21.36 | 22.00 | 23.48 | 24.33 | 24.05 | 24.90 | 25.53 |
| | 12H | 20.05 | 20.82 | 20.64 | 21.42 | 22.05 | 24.14 | 24.91 | 24.73 | 25.51 | 26.15 |
| 8H | 4H | 19.85 | 20.70 | 20.42 | 21.27 | 21.90 | 21.89 | 22.74 | 22.46 | 23.31 | 23.94 |
| | 6H | 20.54 | 21.26 | 21.15 | 21.88 | 22.51 | 23.28 | 24.00 | 23.89 | 24.62 | 25.25 |
| | 8H | 20.80 | 21.44 | 21.41 | 22.07 | 22.72 | 24.02 | 24.67 | 24.64 | 25.30 | 25.95 |
| | 12H | 20.98 | 21.56 | 21.60 | 22.17 | 22.89 | 24.85 | 25.43 | 25.46 | 26.04 | 26.76 |
| 12H | 4H | 19.99 | 20.76 | 20.58 | 21.36 | 21.99 | 21.91 | 22.68 | 22.50 | 23.28 | 23.92 |
| | 6H | 20.76 | 21.40 | 21.37 | 22.03 | 22.68 | 23.33 | 23.98 | 23.95 | 24.61 | 25.26 |
| | 8H | 21.10 | 21.67 | 21.71 | 22.28 | 23.00 | 24.14 | 24.72 | 24.76 | 25.33 | 26.05 |